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Examiner Terrence Willoughby**

From: Michael Prewitt

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MESSAGE:

RE: U.S. Patent Application No. 10/705,645

Attached, please find an Appeal Brief (13 pages), drawings (2 pages), and a copy of the front page of the Appeal Brief (1 page) for fee payment purposes.

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jeffrey L. McElray, Sr. et al.
Assignee : ABB Technology AG
Serial No.: 10/705,645 Art Unit: 2836
Filed: November 10, 2003 Confirmation No.: 6138
Title: ADAPTIVE PROTECTION FOR RECLOSER CONTROL
Examiner: Terrence Ronique Willoughby Docket No.: B000291

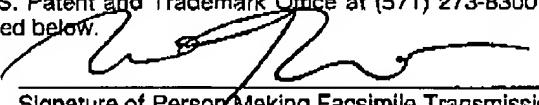
APPEAL BRIEF

Mail Stop: Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In response to the final Office action dated January 22, 2008, and pursuant to the Notice of Appeal filed on February 5, 2008, Applicant submits the following Appeal Brief. Please charge the \$510 fee for filing the Appeal Brief to our Deposit Account No. 050877.

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office at (571) 273-8300 on the date indicated below.



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I. Real Party in Interest

The real party in interest is ABB Technology AG.

II. Related Appeals and Interferences

This Application has no related appeals or interferences.

III. Status of the Claims

Claims 1-3, 6, 8, 10, 13, 15-17, 19, 36-40, 42, and 43 are currently pending in the application. Claims 1-3, 6, 8, 10, 13, 15-17, 19, 36-40, 42, and 43 have been finally rejected and form the basis of this appeal. The Claims Appendix includes a clean copy of claims 1-3, 6, 8, 10, 13, 15-17, 19, 36-40, 42, and 43.

IV. Status of Amendments

No amendments were filed after the final Office Action dated January 22, 2008, from which this appeal is taken.

V. Summary of Claimed Subject Matter

For convenience of the board, copies of Figs. 1 and 4 from the published subject application are enclosed herewith.

Independent claim 1 is directed to a method for controlling a recloser for an electrical power line. An exemplary embodiment of the claimed method is schematically shown in Fig. 4, and is described in the specification from page 11, line 6 through page 12, line 5. In a step 100, a protection setting group is determined. The protection setting group has at least one associated variable that comprises one of time of day, day of week, and month of year (See page 11, lines 13-18). In a step 110, a present condition of the at least one associated variable is determined. A behavior function for the recloser based on the protection setting group and the present condition is determined in a step 120. In a step 130, the recloser is adaptively set to function in accordance with the behavior function.

Independent claim 8 is directed to a computer-readable medium having computer-executable instructions for performing a series of steps, which are schematically shown in Fig. 4 and are described in the specification from page 11, line 6 through page 12, line 5. In a step 100, a protection setting group for a recloser 10 operating on an electrical

power line is determined. The protection setting group has at least one associated variable that comprises one of time of day, day of week and month of year. (See page 11, lines 13-18). The recloser controller 20 is coupled to the recloser 10 and the memory 30 for adaptively setting the recloser 10 to function in accordance with one of the at least one behavior functions in the protection setting group. The recloser controller monitors the present condition of the variable and selects the behavior function based on that condition.

Independent claim 15 is directed to a computer-readable medium having computer-executable instructions for performing a series of steps, which are schematically shown in Fig. 4 and are described in the specification from page 11, line 6 through page 12, line 5. In a step 100, a protection setting group for a recloser 10 operating on an electrical power line is determined. The protection setting group has at least one associated variable that comprises one of time of day, day of week, and month of year (See page 11, lines 13-18). In a step 110, a present condition of the at least one associated variable is determined. A behavior function for the recloser 10 based on the protection setting group and the present condition is determined in a step 120. In a step 130, the recloser 10 is adaptively set to function in accordance with the behavior function.

Independent claim 36 is directed to a recloser control system for an electrical power line. An exemplary embodiment of the claimed recloser control system is schematically shown in Fig. 1 and described in the specification from page 8, line 3 through page 8, line 29. The operation of this embodiment is schematically shown in Fig. 4 and described in the specification from page 11, line 6 through page 12, line 5. The recloser control system includes a recloser 10 and a microcomputer 20 operable to control the recloser 10. Memory 30 stores control instructions, which, when executed by the microcomputer 20 controls the operation of the recloser 10 in accordance with a control scheme selected from a plurality of different control schemes. The selection of the control scheme is based on one or more variables selected from the group consisting of time of day, day of week and month of year. (See page 11, lines 13-18)

VI. Grounds of Rejection to be Reviewed on Appeal

The grounds of rejection to be reviewed on appeal are whether claims 1-3, 6, 8, 10, 13, 15-17, 19, 36-37, 39 and 42-43 are unpatentable under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 5,768,079 to Buell and also whether claims 38 and 40 are

unpatentable under 35 U.S.C. §103 as obvious over Buell.

VII. Argument

The Applicant submits that claims 1-3, 6, 8, 10, 13, 15-17, 19, 36-37, 39 and 42-43 are not anticipated under 35 U.S.C. §102 by Buell and further, that claims 38 and 40 are not obvious under 35 U.S.C. §103 in view of Buell.

a. The Buell Patent

The Buell patent discloses an adaptive ground and phase fault detector for a power distribution system. The Buell system is adaptive in the sense that it can distinguish between gradual changes in current, due to ordinary current fluctuations from more substantial changes in current due to a fault condition. (Buell, Abst). The system performs this function by determining a ground current vector (hereinafter "GCV"), which is the RMS ground current value combined with the ground current phase angle. (Buell, Col. 4, Ln. 14-16). The system also calculates a Ground Offset Vector (hereinafter "GOV") that tracks the GCV in accordance with a user adjustable time constant T_c . (Buell, Col. 4, Ln. 17-20). The time required for the GOV to approximate the value of the GCV is a direct function of user supplied value of T_c . (Col. 4, Ln. 34-36). If the GCV value does not change for several time constants, the GOV will approach the GCV value and eventually approximate it. (Col. 4, Ln. 37-39). In other words, the GOV is essentially a running average, that will generally increase or decrease depending on recent electricity usage. An over-current fault is determined by comparing the GCV to the GOV. (Buell, Col. 5, Ln. 15-19). If the difference is greater than a predetermined value, a fault condition is recognized. Id. Thus the GOV value acts as a continuously self-adjusting baseline value against which the GCV is compared to determine fault. The asserted "adaptive" functionality of the system of Buell is in raising and lowering the current baseline value for determining a fault condition.

b. Rejection under 35 U.S.C. 102(b) over U.S. Patent No. 5,768,079

Claims 1, 2, 3, 6, 8, 10, 13, 15, 16, 17 and 19

The Examiner grouped together the rejection of independent claims 1, 8 and 15 and consequently the Applicant jointly address the issues raised by the Examiner. The claimed invention is a method and system for controlling a recloser comprising determining a protection group having at least one variable, wherein the variable

comprises one of the time of day, day of week, and month of year. The method further includes determining the present condition of the at least one associated variable. Thus, in the case of the variable "time of day", the present condition is, for example, 3:00 pm. In the case of the variable, "day of week" the present condition may be, for example, Wednesday. In the case of the variable, "month of year", the present condition may be, for example September.

Once a present condition is determined, a behavior function for the recloser is determined, based upon the protection setting group and the present condition. Exemplary behavior functions may include single phase or three phase operation, fuse clearing or fuse saving mode, etc. Finally, the recloser is set to function in accordance with the behavior function (for example; single phase operation, three phase operation, fuse clearing or fuse saving mode). In this manner, by determining the time of day, day of week, or month of year, the appropriate behavior functions may be established for the recloser to ensure the most appropriate recloser functionality.

In the final rejection, the Examiner alleges that the passage in Buell, column 3, lines 19-27 and 47-60; column 4, lines 17-67 thru column 5, lines 1-21 shows the step of "determining a protective setting group having at least one associated variable, wherein the at least one associated variable comprises one of time of day, day of week, and month of year. (1/22/08 Office Action, Pg. 3). The Examiner noted that he, "interprets the 'normal, daily and/or seasonal' fluctuations' as an associated variable comprising time of day, day of week, and month of year." (1/22/08 Office Action, Pg. 3).

This statement is not understood and is not an accurate description of the teaching in Buell. Buell discloses that the recloser is, "capable of distinguishing between gradual changes in *load current*, due to normal, daily and/or seasonal fluctuations, versus sudden, more significant fluctuations due to potential fault conditions." (Buell, Col. 3, Ln. 22-26). Thus, the daily and/or seasonal fluctuations Buell references are the fluctuations in *current*. The system taught in Buell does not monitor or in any way determine the time of day, day of week or month of year, as in the presently claimed invention.

The Examiner goes on to state that the present condition of the associated variable is "the adjustable time constant (T_c) that is programmed by a user." 1/22/08 Office Action, Pg. 3. The value of the adjustable time constant (T_c) does not comprise one of the time of day, day of week or month of year. The adjustable time constant (T_c)

is the time required for the GOV to approximate the value of the GCV. (Buell, Col. 4, Ln. 34-36). Thus, it bears no relation to the actual time of day, day of week, or month of year. As the Examiner admits, it is programmed by the user. Thus, nowhere does Buell teach determining the present condition of time of day (ex. 3:00 pm), day of week (ex. Wednesday) or month of year (ex. May).

With reference to the claim limitation, "determining a behavior function for the recloser based on the protection setting group and the present condition," the Examiner states that Buell teaches, "behavior functions as various protection schemes in which the adaptive controller can operate, such as single or three phase tripping scheme as well as in a fuse saving or fuse clearing mode. (1/22/08 Office Action, Pg 3-4). Buell does teach multiple behavior functions such as three phase or single phase, however, the behavior function is *not* selected based on the present condition of the associated variable. The asserted behavior functions taught in Buell are in no way tied to the time of day, day of week or month of year. Conversely, the present invention adaptively determines the behavior function, i.e. how a recloser is configured to react to a fault, based on the time of day, day of week or month of year.

For at least the reasons discussed above, it is believed that independent claims 1, 8 and 15, as well as the claims depending therefrom, are in condition for allowance.

Claim 36, 37, 39, 42, and 43

Claim 36 is a recloser control system for an electrical power line comprising, a recloser, a microcomputer operable to control the recloser; and memory storing control instructions, which, when executed by the microcomputer, controls the operation of the recloser. The operation is performed in accordance with a control scheme selected from a plurality of different control schemes. The selection of the control scheme is based on one or more variables selected from a group consisting of time of day, day of week, and month of year.

As discussed above, Buell does not teach "the selection of the control scheme based on one or more variables selected from a group consisting of time of day, day of week and month of year. The control schemes taught in Buell are not in any way tied to the time of day, day of week or month of year. Thus, for at least these reasons, it is believed that independent claim 36 and the claims depending therefrom are in condition for allowance.

Conclusion

The present invention adaptively determines the behavior function, i.e. how a recloser is configured to react to a fault, based on the time of day, day of week or month of year. Such functionality is not taught or even suggested in Buell. Based on the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 050877.

Respectfully submitted,

ABB Technology AG

By:



Michael C Prewitt, Reg. No. 60526

4/1/2008

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Claims Appendix**Listing of Claims:**

1. A method for controlling a recloser for an electrical power line, comprising:
 - determining a protection setting group, the protection setting group having at least one associated variable, wherein the at least one associated variable comprises one of time of day, day of week, and month of year;
 - determining a present condition of the at least one associated variable;
 - determining a behavior function for the recloser based on the protection setting group and the present condition; and
 - adaptively setting the recloser to function in accordance with the behavior function.
2. The method according to claim 1, further comprising continuously monitoring the present condition and changing the behavior function responsive to the monitoring.
3. The method according to claim 2, wherein the monitoring the present condition comprises monitoring at predetermined intervals.
4. (Canceled)
5. (Canceled)
6. The method according to claim 1, wherein the behavior function comprises one of fuse saving mode and fuse clearing mode.
7. (Canceled)
8. A recloser control system for an electrical power line, comprising:
 - a recloser;
 - a memory, operable to store a protection setting group having at least one behavior function with at least one associated variable, wherein the associated variable comprises one of time of day, day of week, and month of year; and
 - a recloser controller coupled to the recloser and the memory for adaptively setting

the recloser to function in accordance with one of the at least one behavior functions in the protection setting group, wherein the recloser controller monitors a present condition of the associated variable and selects the behavior function based on the present condition.

9. (Cancelled)

10. The recloser control system according to claim 8, wherein the recloser controller comprises the memory.

11. (Canceled)

12. (Canceled)

13. The recloser control system according to claim 8, wherein the at least one behavior function comprises one of a fuse saving mode and a fuse clearing mode.

14. (Canceled)

15. A computer-readable medium having computer-executable instructions for performing steps comprising:

determining a protection setting group for a recloser operating on an electrical power line, the protection setting group having at least one associated variable, wherein the at least one associated variable comprises one of time of day, day of week, and month of year;

determining a present condition of the at least one associated variable;

determining a behavior function for the recloser based on the protection setting group and the present condition; and

adaptively setting the recloser to function in accordance with the behavior function.

16. The computer-readable medium according to claim 15, further comprising computer-executable instructions for continuously monitoring the present condition and changing the behavior function responsive to the monitoring.

17. The computer-readable medium according to claim 16, wherein monitoring the present condition comprises monitoring at predetermined intervals.

18. (Canceled)

19. The computer-readable medium according to claim 15, wherein the behavior function comprises one of a fuse saving mode and a fuse clearing mode.

20-35 (Canceled)

36. A recloser control system for an electrical power line, the recloser control system comprising:

a recloser;

a microcomputer operable to control the recloser; and

memory storing control instructions, which, when executed by the microcomputer, controls the operation of the recloser in accordance with a control scheme selected from a plurality of different control schemes, wherein selection of the control scheme is based on one or more variables selected from a group consisting of time of day, day of week, and month of year.

37. The recloser control system of claim 36, wherein a first one of the control schemes is a fuse saving control scheme and a second one of the control schemes is a fuse clearing control scheme, and wherein the one or more variables comprises time of day and day of week.

38. The recloser control system of claim 37, wherein when the time of day is between 8:00 AM and 5:00 PM and the day of week is one of Monday, Tuesday, Wednesday, Thursday and Friday, then the second one of the control schemes is selected.

39. The recloser control system of claim 36, wherein a first one of the control schemes causes the recloser to operate in a single phase mode and a second one of the control schemes causes the recloser to operate in a three-phase mode, and wherein the one or

more variables comprises month of year.

40. The recloser control system of claim 39, wherein when the month of year is one of April, May, June, July, August and September, then the second one of the control schemes is selected.

41. (Canceled)

42. The recloser control system of claim 36, wherein a first one of the control schemes causes the recloser to operate in a single phase mode and a second one of the control schemes causes the recloser to operate in a three-phase mode, and wherein the one or more variables comprises load current.

43. The recloser control system of claim 36, wherein the recloser system further comprises a controller that includes the microcomputer and the memory.

Evidence Appendix

None

Related Proceedings Appendix

None

Patent Application Publication Jun. 3, 2004 Sheet 1 of 3 US 2004/0105204 A1

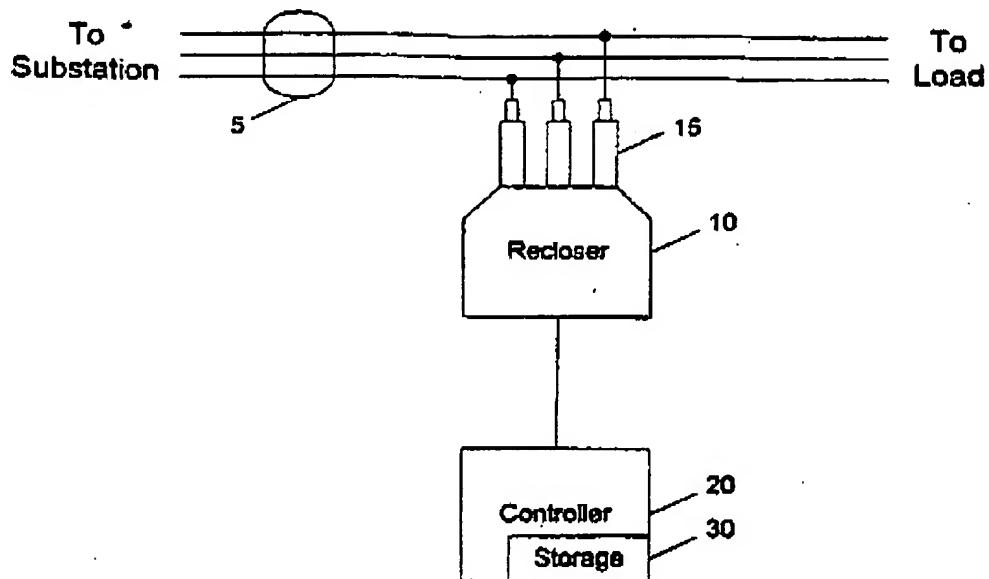


FIG. 1

Patent Application Publication

Jun. 3, 2004 Sheet 3 of 3

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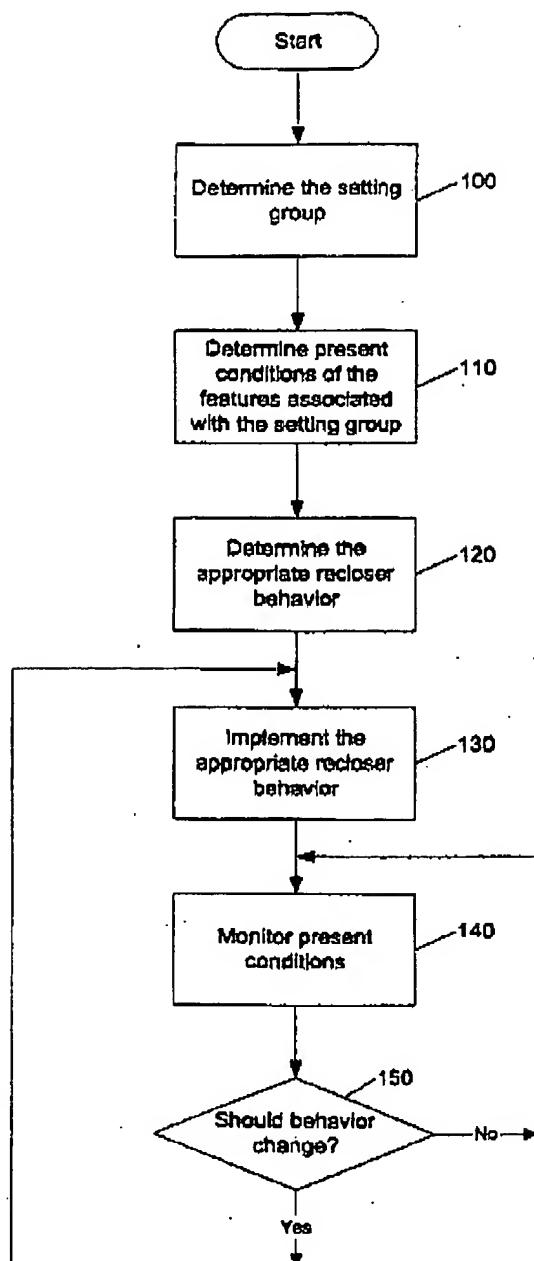


FIG. 4

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jeffrey L. McElray, Sr. et al.
Assignee : ABB Technology AG
Serial No.: 10/705,645 Art Unit: 2836
Filed: November 10, 2003 Confirmation No.: 6138
Title: ADAPTIVE PROTECTION FOR RECLOSER CONTROL
Examiner: Terrence Ronique Willoughby Docket No.: B000291

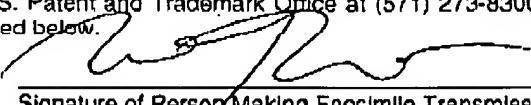
APPEAL BRIEF

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